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7590

10/30/2002

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EXAMINER

DOVE, TRACY MAE

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 10/30/2002

Remanded 6/9/03

Please find below and/or attached an Office communication concerning this application or proceeding.

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### **DETAILED ACTION**

This Office Action is in response to the communication filed on 9/21/01. Applicant's arguments have been considered, but are moot in view of the new grounds of rejection. Claims 1, 2, 4-11, 13-22, 24 and 25 are rejected. Claims 3, 12 and 23 are directed toward allowable subject matter. This Action is made Non-Final.

#### ***Specification***

The objection to the specification has been withdrawn.

#### ***Claim Rejections - 35 USC § 112***

All 35 U.S.C. 112, second paragraph, rejections have been withdrawn.

#### ***Double Patenting***

Due to the abandonment of application 09/415,466 the double patenting rejection has been withdrawn. Note that a petition to revive application 09/415,466 has been received, and if the petition is granted, the double patenting rejection will be reinstated.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless -

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371© of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1, 2, 4-11, 13-22, 24 and 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshimura et al., US 6,291,094.

Yoshimura teaches an inexpensive and corrosion resistant metal-made gas separator for a fuel cell including a base, a first coating layer and a second coating layer. See abstract. The separator has a metallic base member, a first coating layer covering at least a portion of a surface of the base member (the first coating layer being formed from a first electrically conductive material) and a second coating layer covering at least a face where the first coating layer is formed (the second coating layer being formed from a second electrically conductive material different from the first electrically conductive material). See col. 2, lines 1-14. The second electrically conductive material may be a carbon material, such as thermal expansion graphite (col. 2, lines 40-42). The base member is coated with an electrically conductive material other

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than carbon and with a carbon material so that a sufficiently high corrosion resistance can be achieved (col. 2, lines 15-20). The first coating layer may have a rough surface to increase the adhesion strength between the first coating layer and the second coating layer (bonds together). See col. 3, lines 1-5. The metal of the base sheet may be aluminum (col. 8, lines 29-45: claim 2). Thermal expansion graphite is a type of exfoliated graphite (col. 9, lines 23-50: claim 5). The first coating layer preferably has a rough surface including irregularities such as protrusions and recesses (col. 12, lines 63-66: claim 6). The second coating layer secures a sufficiently high corrosion resistance of the separator due to the prevention of micro-holes in the first coating layer (col. 7, lines 48-52 and col. 8, lines 21-25). The second coating layer may be a formed by pressing a carbon sheet (foil) on the first coating layer (col. 6, lines 50-67: claim 7). Graphite is an electrically conductive material (claim 9). The graphite coating is hydrophobic (claim 10). Flow fields are shown by Figs. 1 and 4 (claims 18). If the same graphite material as that used to form the second coating layer is taken up into the first coating layer, the contact area between the layer is increased and the contact resistance is decreased (col. 11, lines 3-9). Yoshimura teaches the first coating layer includes graphite (claim 4, 14).

Thus, the claims are anticipated.

***Allowable Subject Matter***

Claim 23 is allowed.

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Claims 3 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the claims are directed toward a coated fuel cell bipolar plate. The plate is coated with a first layer and a second layer. Claim 3 requires that the first layer is an electrically conductive coating of a graphite emulsion (interpreted as “consisting of a graphite emulsion”). Claims 12 and 23 recite a specific thickness of the second layer (corrosion resistant layer).

Yoshimura teaches a separator plate for a fuel cell having a first coating layer and a second coating layer. However, Yoshimura does not teach that the first layer consists of a graphite emulsion and the second layer includes graphite. Yoshimura teaches away from claim 3 because the reference states the “base member is coated with an electrically conductive material other than carbon” (col. 2, lines 15-20). Thus while Yoshimura teaches the first coating layer may contain graphite (carbon material), the reference teaches that the layer must include an electrically conductive material other than carbon. See discussion of Yoshimura above. Yoshimura is silent regarding the thickness of the first and/or second coating layers.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner

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may normally be reached Monday-Thursday (9:00 AM-7:30 PM). My supervisor is Pat Ryan, who can be reached at (703) 308-2383. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax numbers are 703-872-9310 (after non-final) and 703-872-9311 (after final).

October 28, 2002